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ABSTRACT

The present invention generally relates to improved capacitors; in particular, the present invention provides advanced valve metal (AVM) anodes and methods for fabricating AVM anodes having complex surface and interior features for use in high energy density capacitors. Such anodes find use in high voltage capacitors incorporated into implantable medical devices (IMDs), among other uses. The AVM anodes may be pressed into virtually any arbitrary shape and may have a gradually changing (or substantially constant) density profile throughout the AVM anode. Such AVM anodes may also be perforated or shaped to receive one or more cathode members. The AVM anodes enhance packaging efficiency for compact high energy density capacitors.